What is claimed is:

1. A thermal treatment equipment for heating a substrate using gas heated by a gas-heating unit as a heating source, comprising:

treatment rooms of n pieces (n > 2) for performing heat-treating, each having the gas-heating unit;

a preparatory heating room; and

a cooling room,

wherein a gas-supplying unit is connected to a gas charge port of the cooling room, a discharge port of the cooling room is connected to a first gas-heating unit through a heat exchanger, a charge port of an m-th ($1 \leqq m \leqq (n-1)$) treatment room is connected to a discharge port of an m-th gas-heating unit, a charge port of an n-th treatment room is connected to a discharge port of an n-th gas-heating unit, a discharge port of the n-th treatment room is connected to the heat exchanger, and a discharge port of the heat exchanger is connected to a gas charge port of the preparatory heating room.

2. A thermal treatment equipment according to Claim 1, wherein the gas is nitrogen or noble gas.

3. A thermal treatment equipment according to Claim 1, wherein the gas is reducing gas.

4. A thermal treatment equipment according to Claim 1, wherein the gas is oxidizing gas.

5. A thermal treatment equipment according to Claim 1, wherein the treatment room is formed of quartz or ceramic.

6. A method for thermal treatment comprising the step of:

heating a substrate by using gas heated by a heating unit as a heating source.

wherein the thermal treatment is performed by using a thermal treatment equipment comprising treatment rooms of n pieces (n > 2) each having the heating unit, a preparatory heating room, and a cooling room, gas heated by an m-th ($1 \leqq m \leqq (n-1)$) heating unit is supplied to an m-th treating room by treating rooms and gas-heating units of n pieces (n > 2), gas supplied to the m-th treatment room is heated by an (m + 1)-th heating unit and is supplied to an (m + 1)-th treatment room, substrates arranged at the treatment room of n pieces are heated, gas supplied to an n-th treatment room is supplied to a heat exchanger, gas supplied from a gas-supplying unit is used as a heating source for heating, gas supplied from the gas-supplying unit is supplied to the cooling room, gas discharged from the cooling room is supplied to a first gas-heating unit through the heat exchanger, and gas discharged from the heat exchanger is supplied to the preparatory heating room.

7. A method for thermal treatment according to Claim 6, wherein nitrogen or noble gas is used for the gas.

8. A method for thermal treatment according to Claim 6, wherein reducing gas is used for the gas.

9. A method for thermal treatment according to Claim 6, wherein oxidizing gas is used for the gas.

10. A thermal treatment equipment comprising:

treatment rooms of n pieces (n > 2) for performing heat-treating;

a preparatory heating room; and

a cooling room,

wherein a gas-supplying unit is connected to a gas charge port of the cooling room, a discharge port of the cooling room is connected to a first gas-heating unit through a heat exchanger, a charge port of an m-th ($1 \leqq m \leqq (n-1)$) treatment room is connected to a discharge port of an m-th gas-heating unit, a charge port of an n-th

treatment room is connected to a discharge port of an n-th gas-heating unit, a discharge port of the n-th treatment room is connected to the heat exchanger, and a discharge port of the heat exchanger is connected to a gas charge port of the preparatory heating room.

11. A thermal treatment equipment according to Claim 10, wherein nitrogen or noble gas is used for the gas.

12. A thermal treatment equipment according to Claim 10, wherein reducing gas is used for the gas.

13. A thermal treatment equipment according to Claim 10, wherein oxidizing gas is used for the gas.

14. A thermal treatment equipment according to Claim 10, wherein the treatment room is formed of quartz or ceramic.

15. A thermal treatment equipment comprising:

treatment rooms of n pieces ($n > 2$); and

gas-heating units of n pieces ($n > 2$),

wherein a charge port of an m-th ($1 \leqq m \leqq (n-1)$) treatment room is connected to a discharge port of an m-th gas-heating unit, a charge port of an n-th treatment room is connected to a discharge port of an n-th gas-heating unit, and a discharge port of the n-th treatment room is connected to a heat exchanger.

16. A thermal treatment equipment according to Claim 15, wherein nitrogen or noble gas is used for the gas.

17. A thermal treatment equipment according to Claim 15, wherein reducing gas is used for the gas.

18. A thermal treatment equipment according to Claim 15, wherein oxidizing gas is used for the gas.

19. A thermal treatment equipment according to Claim 15, wherein the treatment room is formed of quartz or ceramic.

20. A method for thermal treatment comprising the steps of:

introducing n substrates (n > 2) into treatment rooms of n pieces; and

heating the n substrates by gas-heating units of n pieces as heating sources,

wherein a charge port of an m-th ($1 \leqq m \leqq (n-1)$) treatment room is connected to a discharge port of an m-th gas-heating unit, a charge port of an n-th treatment room is connected to a discharge port of an n-th gas-heating unit, and a discharge port of the n-th treatment room is connected to a heat exchanger.

21. A method for thermal treatment according to Claim 20, wherein nitrogen or noble gas is used for the gas.

22. A method for thermal treatment according to Claim 20, wherein reducing gas is used for the gas.

23. A method for thermal treatment according to Claim 20, wherein oxidizing gas is used for the gas.